REMARKS

The Applicants appreciate the withdrawal of the previous grounds for rejection. Claims 21-25, 27-36 and 41 are newly rejected under 35 U.S.C. §§103(a) as being unpatentable over U.S. Patent 4,804,905 (hereinafter "Ding") in view of U.S. Patent 5,514,482 (hereinafter "Strangman"). Additional secondary references in various combinations are applied to reject further claims. Reconsideration of the rejections and allowance of all pending claims is requested in view of the foregoing amendments and the following remarks.

Claims 1-20 and 26 were previously cancelled. Claims 21-25 and 27-40 are pending.

M.P.E.P. 2143.03 provides that to establish *prima facie* obviousness of a claimed invention, all the claims limitations must be taught or suggested by the prior art. All words in a claim must be considered for judging the patentability of the claim against the prior art. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending there from is nonobvious.

Independent claims 21 and 41 are each directed to a turbo engine. As amended, each claim in part respectively recites a measuring element for measuring an electric or magnetic field strength set up by a charge distribution on the electrically insulating surface of the rotor blades or guide vanes and for generating a signal indicative of the electric or magnetic field strength. The strength of the electric or magnetic field is indicative of a level of wear or a defect that can arise in the electrically insulating surface.

The primary reference (Ding) fails to teach or suggest a turbo engine that includes a measuring element for measuring an electric or magnetic field strength set up by a charge distribution on the electrically insulating surface of the rotor blades or guide vanes. Moreover, Ding fails to teach or suggest that the strength of the electric or magnetic field obtained by the measuring element is indicative of a level of wear or a defect that can arise in the electrically insulating surface.

Ding expressly describes at col. 4, lines 32-40 that the maximum charge Qi_{max} for each blade passage varies with the capacitance of the gap capacitor C_{si} and thus with the distance s of

the individual blade 4 from the sensor in accordance with the equation below:

$$Qi_{max} = C_{si} \times U_{ref} \times f(s)$$

where f(s) represents the relationship between gap and capacitance as determined by calibration.

That is, one skilled in the art would appreciate that Ding's device is expressly directed to measuring a blade clearance and have nothing to do with a charge distribution on the electrically insulating surface of the rotor blades or guide vanes that forms an electric or magnetic field indicative of a level of wear or a defect that can arise in the electrically insulating surface, as set forth in the claimed invention.

The secondary cited references fail to remedy this fundamental deficiency of Ding in connection with the claimed invention. Accordingly, applicant asserts that based on the distinguishing structural and/or operational relationships respectively recited in claims 21 and 41, such claims cannot be rendered obvious by the cited art. Furthermore, claims 22-25 and 27-31 either directly or indirectly depend from independent claim 21 and are therefore construed to contain each of the structural and/or operational relationships of claim 21. Thus, the cited art fails to render obvious these dependent claims. Applicant respectfully requests reconsideration and withdrawal of this 35 USC § 103(a) rejection.

Independent claim 32 is directed to a method for determining damage to an electrically insulating surface of a turbine component. Claim 32 in part recites creating an electric or magnetic field strength by a charge distribution on the electrically insulating surface of the turbine blade or vane. The electric or magnetic field strength is measured by a measuring element. The strength of the electric or magnetic field is indicative of a level of wear or a defect that arises in the electrically insulating surface. Accordingly, applicant asserts that based on the distinguishing structural and/or operational relationships respectively recited in claim 32, such a claim (and claims depending there from) cannot be rendered obvious by the cited art. Thus, for similar reasons, the cited art fails to render obvious these dependent claims. Applicant respectfully requests reconsideration and withdrawal of this 35 USC § 103(a) rejection.

Dependent claims 29, 35 and 36 are rejected under 35 USC § 103(a) as being unpatentable over Ding in view of Strangman and further in view of U.S. Patent 5,552,711 (hereinafter "Deegan"). Applicant traverses and incorporates herein the remarks made in response to the rejection of independent claims 21 and 32. Claims 29, 35 and 36 include additional distinguishing features and are construed to contain the structural and/or operational relationships of claims 21 or 32. In view of the discussion above that independent claims 21 and 32 are not unpatentable over the Ding and Strangman references, claims 29, 35 and 36 are also not obvious over such references. The Deegan reference does not cure the deficiencies of the Ding, and Strangman references with respect to claims 21 and 32, and therefore further applying Deegan does not render obvious claims 29, 35 and 36. Applicant respectfully requests reconsideration of this 35 USC § 103(a) rejection.

Dependent claims 37-40 are rejected under 35 USC § 103(a) as being unpatentable over Ding in view of Strangman and further in view of I.E.E.E. Interharmonic Task Force Publication titled "*Interharmonics in Power Systems*". Applicant traverses and incorporates herein the remarks made in response to the rejection of independent claim 32. Claims 37-40 include additional distinguishing features and are construed to contain the structural and/or operational relationships of claim 32. In view of the discussion above that claim 32 is not unpatentable over the Ding, and Strangman references, claims 37-40 are also not unpatentable over such references. The I.E.E.E. Interharmonic Task Force Publication does not cure the deficiencies of the Ding, and Strangman references with respect to claim 32, and therefore further applying the I.E.E.E. Interharmonic Task Force Publication does not render obvious claims 37-40. Applicant respectfully requests reconsideration of this 35 USC § 103(a) rejection.

Conclusion

It is respectfully submitted that each of the claims pending in this application recites patentable subject matter and it is further submitted that such claims comply with all statutory requirements and thus each of such claims should be allowed.

The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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